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GLEANINGS

IN BEE CULTURE

CONTENTS

MARKET QUOTATIONS.....	916
STRAWS, by Dr. Miller.....	923
PICKINGS, by Stenog.....	924
CONVERSATIONS WITH DOOLITTLE	925
BEE-KEEPING AMONG THE ROCKIES.....	926
EDITORIALS	928
Colonies not Necessarily Queenless.....	928
When to Winter Indoors.....	928
Locality, and its Bearing on Apiculture.....	928
J. B. Mason, Bee-keeper and Supply-dealer.....	929
GENERAL CORRESPONDENCE	930
Our Symposium on Hoffman Frames.....	930
The Miller Nailed-spaced Frame.....	936
HEADS OF GRAIN.....	938
How to Disinfect Hives.....	938
Tin as a Mid-rib for Comb Foundation.....	938
Why the Colony didn't Build Cells.....	938
Red-clover Bees	939
Does a Queen Mate more than Once.....	939
One Fault to Find with the Fence Separator.....	939
New Method of Curing Foul Brood.....	940
Sainfoin as a Honey and Hay Producer.....	940
Excelsior to Keep Bees from Drowning.....	940
Kerosene for Bee-stings: Alsike Honey.....	940
An Interesting Case of Foundation.....	941
A Swarm that wouldn't stay Hived.....	941
A Flat Honey-knife Handle.....	941
A Difference in the Grading Rules.....	941
How to Move Bees a Short Distance.....	942
Friend Salisbury and his Oldsmobile.....	942
OUR HOMES.....	943
SPECIAL NOTICES	953

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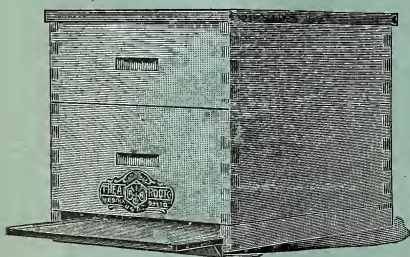
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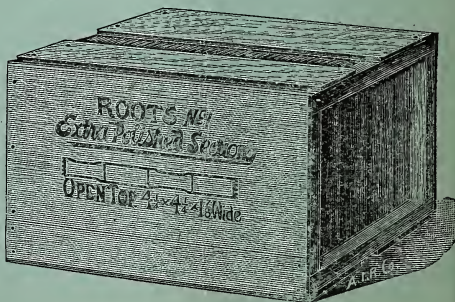


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JOKE ON W. K. Morrison, p. 892. Right after saying the papers get mixed when talking about pigeons and dogs, he gets mixed himself when talking about the Dr. Walkers. Friend Morrison, it was *Emma* that started the row in *The Ladies' Home Journal*, not Dr. Mary of the bifurcated garments.

IF YOU WANT to make an easy job of scouring your silverware (this is for the sisterhood), try this: Take an aluminum dish, put in it a suds made with ivory soap, and in this boil your articles of silverware. That's the way it's done at our house, and it's away ahead of any sort of scouring—the things come out as bright as new, only it's something of a job to clean the aluminum dish.

REPLYING to S. LaMont's question about young queens swarming, p. 897, there may be a difference in locality and season, and perhaps more in bees. In my own case, if a young queen only three or four weeks old begins laying in a colony after the opening of the honey harvest, there being no unsealed brood in the hive when she begins to lay, I have no further anxiety about that colony swarming that season.

KING-BIRDS pronounced not guilty because no dead bees in stomach, p. 888. But there has been very positive testimony that they do kill them. They just mash 'em and spit 'em out, so of course no dead bees would be found in stomach. [Yes; since the item referred to was published there have been reports from various sources showing that the king-birds in some cases may be a serious menace to queen-rearing operations. In some yards, at least, it may be advisable to use a shotgun if many queens would be reared.—ED.]

THANKS, friend A. I., for giving us that poem, "Come in the evening or come in the morning," p. 898. I read it to Mrs. Miller, and she said, in a half-meditative way, "If there was a little more of that nowadays, there wouldn't be so many divorces, would there?" But say, friend Root, if you like that sort of thing—and I'm sure I do—the old Scotch songs ought just to suit you. I'd like to sing 'em to you for half an hour.

"IF THE new queen has acquired the scent of the bees of the hive," etc., p. 886. Where does that scent originate? Don't know just where I got the idea, but I always supposed that the queen was the one that carried the perfumery-bottle. Have I got to unlearn that? [Yes and no. Whether the queen may carry the scent-bottle, I think that we can be reasonably certain that she must acquire the general scent of the colony; otherwise she is regarded as an intruder and is treated accordingly.—ED]

VERY INTERESTING is that article of Dr. E. F. Phillips, page 846, and it seems quite reasonable to believe that young bees do not go afield because they can not see. Yet it must not be ignored that very young bees, under stress, have been reported as doing field work. In my own experience I had one such case. An imported queen was shut in a hive with absolutely not a worker present, but with just-emerging worker brood. Five days later the entrance was opened, and in a short time the five-day youngsters returned with loads of pollen. [We have had other reports that young bees will go to the field very early; indeed, we have one in hand now that is not yet published. Whether this militates against Dr. Phillips' theory or observations, I can not say.—ED.]

A PLAIN flat board suits J. A. Green best for a hive-cover, with two stones to keep it flat when it obstinately refuses to stay flat, p. 885. Same thing here, only I want a hollow place filled with wind in the center of the cover, the grain of the wood above and below running in opposite directions—cooler than a solid board in hot weather, and warmer in cold weather. And next time Editor Root sees them he'll tell you they stay flat without compulsion. [I am rather of the

opinion that, if your double covers were subjected to the climate of Colorado, they would pull all to pieces. The arid regions seem to require that all hives be made of as few pieces as possible, and this is doubtless the reason why the flat cover, made as it is of only three pieces—one board and two ends—is preferred by friend Green.—ED.]

WHITE CLOVER all over the fields at Medina, p. 885. Yes, but do bees ever gather from it to amount to any thing in September? Don't here. Seems out o' season. [The mention of white clover on page 885, to which you refer, was not made because bees gather honey from it in September, but because of a young and promising growth that makes prospects next June and July so favorable. When we know more about this science of white clover and its peculiarities I think we shall be able to tell almost a year in advance whether there will be a white-clover crop. A season of drouth, particularly if it goes clear up until the fall, is apt to kill off all the young clover, and, no matter what the next season will be, there is liable to be a shortage of honey from this source. I apprehend that there would have been a larger crop of clover honey this summer if there had been more of a growth of young plants last fall.—ED.]

REPORTS about cross bees raise the question whether there is not a difference in years as to crossness. I never had so much trouble with cross bees as last season, notwithstanding the fact that it was the best honey-year I ever knew. They attacked people at an unusual distance from the hives, and that, too, when no one was disturbing them. I hardly think it was deterioration on the part of the bees, No. 112 was voted the crossiest in the Wilson apiary, and its character hardly ought to have changed, for its queen was four years old, yet the colony had not in previous years distinguished itself for viciousness. [I believe you are right. Bees are crosser some seasons than others. Conditions of the atmosphere, sudden cessation of the honey-flow, especially if the honey be of an aromatic or strongly flavored character, will sometimes cause the bees to be very cross. Some seasons bees have seemed to be crosser here with us, but such crossness I have usually traced to a little infusion of the five-banded blood.—ED.]

MELLIFICA or mellifera? Mellifica may be the more appropriate, but mellifera has the right of way because of priority. The name first given must be the one used. Why? Probably largely out of deference to the man who first gives the name. But in this case would it not be showing more deference to Linnæus to respect his wishes in regard to the matter? In substance he said, "I made a mistake when I gave the name mellifera; and I now ask that it be named mellifica." Dr. Buttel is perhaps as great a stickler for scientific accuracy as our scientists on this side the water, and he urges that mellifica be used. It will be just like

a certain editor to fling back at me, "Why, you're the very one who urged that mellifera should be used!" Yes, but I know more now than I then knew. I didn't know then that Linnæus himself changed to the more appropriate name, mellifica. [I had supposed that scientific men agreed perfectly that *mellifera* was the only and the right name. It is a little difficult to change a name after it once gets started, and if there could be any good reason for keeping the old name, *mellifica*, the publishers of bee literature would prefer to retain it.—ED.]



In comparing the relative merits of bee poison with that from wasps, Mr. Wathelet, editor of *Le Rucher Belge*, says, "It can not be that the poisons of these two insects are identical. Several days ago in seizing a small wasp that was trying to enter a hive, I was stung on the finger. The pain was very great. I rubbed the wound to get the poison out, but the pain would not abate. An hour after, the finger was greatly swollen and painful. For three days I could not bend it. I have received thousands of stings from bees since I have been in the bee-keeping business, but I never before felt such pain. I should rather have fifty stings from bees than one from a wasp. Ten minutes after being stung by bees I do not know that I have been stung; but for eight days I felt the sting of that wasp. No, the sting of our little pets is not the same as that of the malicious wasp; and many serious accidents that have been attributed to bees have been due entirely to their enemies, the wasps."

The greater severity of the pain may be due to the fact that the wasp, being larger than the bee, and much stronger, secretes a larger quantity of its peculiar etiquette, and unloads it deeper under the skin. It is to be doubted whether a chemical analysis would determine whether this or that is bee or wasp venom. At all events, we hope Mr. Wathelet's finger is now fully recovered, for he is a very interesting writer.

According to the *British Bee Journal*, the bee-keepers of England have been having a honey show in London. One of the exhibitors, Mr. W. Woodloy, has some very pertinent things to say regarding such displays as a means of finding a market for honey; and although such large markets as London are not to be found everywhere, the experience of Mr. W. is good for all. I quote a few lines:

I was very sorry to find that two tables, large enough to take a dozen or more trophies, had been set apart in

the large hall, and only four exhibits staged thereon. Surely bee-keepers failed to realize the opportunity these large shows have given individual bee-keepers of establishing a market for their produce. The honey-buyers of large firms attend these exhibitions, hoping to secure a supply, not only for their immediate requirements, but a continued supply for the season so long as honey is in demand; and I myself may affirm that section honey in the comb is in demand at all seasons of the year, when it can be had in good quality, and preserved in liquid condition in the combs. That has been my experience for many years past. I have secured regular customers, and we send off consignments of such sections every week throughout the year. It may be asked how I obtained these customers. My reply is: When I took up modern bee-keeping I put in an appearance on the show-bench at South Kensington, and trade began to flow in. This was a quarter of a century ago, and I still supply the same firms to-day. My "trophy" at the Confectioners' Show this week was sold two months ago (or, rather, was ordered in advance) to one of my oldest customers, whom I almost look on as friends after so many years of honorable dealing. To others who produce honey, and have difficulty in finding a market, I say, "Go and do likewise." London is a big place, and requires a large quantity of food of all kinds every day. I do hope our bee-keepers will pay a visit to the exhibition, and see not only the British section but also the grand exhibit staged by the Canadian Government, among which is a large parcel of section honey; and, what is of greater interest to them, is the fact that I was told, an English firm had bought all the honey staged before the show was opened! Here we see the value of enterprise on the one part, and the breadth of London's requirements on the other.

Probably three-fourths of London's inhabitants never taste honey.

If any of the readers of GLEANINGS can make use of an Italian bee-journal we will mail one free. We will also send one printed in Spanish, Dutch, Flemish, Danish, Swedish, Bohemian, or Esthonian as long as we receive the present supply.

In writing for the press it is desirable on the part of the printers to have the work done with a pen and ink instead of a lead-pencil. Before mailing the article, let some of the family read it aloud to you in order to supply the missing words.



LARGE HIVES AND NO SWARMING.

"What do you think of the idea a neighbor advanced to me yesterday?"

"How can I tell until I know what that idea was?"

"I did not tell you, did I? Well, it was this: He said that, if I would use large hives, I would have large colonies when working for comb honey, with no swarming. If that is a fact, would it not be well for us to drop all of our former notions regarding the contraction of the brood-nest, when working for comb honey, and give all colonies a great big hive, and so let the bees take care of themselves very largely?"

"You know, friend Jones, that I have been the advocate of a brood-chamber as

small as or smaller than nearly any one else, when working for comb honey, the same holding only nine Gallup frames."

"Yes, I am familiar with this."

"Those nine Gallup frames give a capacity about the same as 6½ Langstroth frames would; and from a brood-nest of that capacity I secured an average yield of 100 pounds of comb honey from each colony for eleven years in succession during the later seventies and the early eighties—a record which has rarely if ever been excelled, covering that term of years."

"I believe that is right."

"Now, while that is so, I am free to confess that, without doubt, more labor is required in rightly managing such hives than is needed in the management of large hives. But with me it has always seemed that, from the extra amount of honey obtained, I always secured enough to pay fully for the extra labor expended; and, if so, could the plea of letting the bees take care of themselves enter into the problem?"

"I had hardly thought of that."

"The question, it seems to me, is, which will give the best returns for the amount of labor expended? and not how little labor is it possible to run an apiary with and secure any returns at all?"

"Then you do not think as good returns can be secured with the large hives with little labor?"

"That is right. But let us look a little into that matter of large hives giving large colonies with no desire to swarm, and another claim put forth by some—that swarms from the large hives are so much larger than those from the small hives. I believe there is something overlooked here; for, with those nine-frame Gallup hives, I have had fully as little swarming as I have had with the ten-frame Langstroth hives, and the average of the swarms was not materially different as to size in either case."

"I hardly see why that should be so."

"I am free to admit that, were each placed side by side, with no sections on, the ten-frame L. hives would probably be later in swarming, and send out larger swarms; but no one working on the contraction plan treats his colonies in that way."

"He would be a strange bee-keeper if he did."

"Then we have that, with the small hive or brood-chamber, the sections are put on as soon as the honey-flow commences, and the brood-combs are manipulated till the whole are solid full of brood; and when in this shape, if any honey is stored, it must go into the sections, for there is no other place for it to go. Is this as you understand it?"

"Very nearly."

"Thus started early in the sections, the bees become accustomed to their surroundings, and these fully occupied combs of brood entertain the best queen to her full capacity as to egg-laying; and, if we have made no mistake, how could a larger hive give any larger colonies? Large hives do not give large colonies beyond any hive

which gives the queen room for *her full capacity*. Am I right here?"

"I can see no flaw in that assertion."

"If the queen has all the vacant cell room her prolificness requires, more room is only a damage to our crop of comb honey; for in the finding of too many vacant cells in the brood-chamber at the beginning of the honey harvest comes an 'accustomment' to the brood-chamber for storing honey, instead of the sections, and thus the queen is crowded upon with honey, instead of said honey going into the sections; and with restricted room for her eggs comes discontent, and from this discontent comes the desire, and from the desire comes swarming, the very thing that we are told we shall not have if we will only use large hives."

"I wish my neighbor could hear your argument. Perhaps he could give as good arguments on his side. I don't know enough. I can only say that it looks reasonable."

"Remember we are looking at the matter from the comb-honey standpoint, or honey in sections, not extracted honey."

"But you do have larger hives, do you not?"

"Yes. Some fifteen to seventeen years ago I was persuaded to buy of a farmer, living five miles from me, his bees, as he did not wish to keep them longer, and with the bees he gave me the privilege of allowing them to remain where they were for a few pounds of honey each year. These bees were in the ten-frame L. hives, and I have kept them in those hives ever since, and at the same place, and thus I have had a chance to know about the workings of these hives as compared with the nine-frame Gallup hives of my home yard."

"How do they compare?"

"The result has been that I can, by giving plenty of section room, hold these colonies at the outyard back from swarming about a week later, on an average, than where the nine Gallup frames are used; but this out-apiary is no nearer being a non-swarming apiary than my home yard, and, in fact, I often consider them more determined to swarm than those are here; but the swarming comes a little later in the season."

"Do you consider this little later swarming of any benefit for comb-honey production?"

"This being held back a week in swarming has quite a bearing upon the problem of comb-honey production, from my present standpoint; for when colonies are managed on the 'shook' plan of swarming, as given in the February 1st number of GLEANINGS of this year, this holding-back puts them in just the right position to have the swarming done up so they can take advantage of the honey harvest when it comes, with the largest possible working force, with no desire to swarm after the manipulation."

"But all this requires work."

"Yes, some work; but no more work than we are well paid for. One thing I find, no matter what hive is used, or how many

frames that hive contains, within the bounds of reason in securing a good crop of section honey, either way, toward large or small brood-chambers, a given amount of labor *must* be performed, so that the idea of letting the bees take care of themselves is nearly or quite a myth, if we expect to reap any great success from our bees. This no-labor part, and that of putting more colonies into the field, has been harped on so much of late that it has become a sort of bugbear, and a desire seems to have sprung up for a 'holding of the pot to catch the porridge' sort of apiculture, unworthy of the best attainments. 'In the sweat of thy face shalt thou eat bread' brings the highest joy that is attained in this life. Is it not to the one who has labored and toiled patiently, day after day, till at last the problem worked upon has been fully conquered and solved, that the greatest satisfaction comes?"



What an all-devouring appetite is that of friend Adelsbach, of the *Western Bee Journal*! Wonder whose turn it will be next.

Extracted honey that has already granulated too much to run at all may be made to run quite freely by a thorough stirring.

Back in Illinois I seldom found it of any benefit to put the honey-knife in water, either hot or cold. When I did, cold water was just as good as hot. But when extracting Colorado alfalfa honey, hot water is decidedly better than cold, even in hot weather.

It is claimed by those who think it unnecessary to use excluding zinc between the brood-chamber and the extracting-combs that the honey can readily be extracted from combs containing unsealed brood without injuring or throwing out the brood. This is largely true in the East, but not here. I had to extract from only four or five combs containing brood, and I found it a matter of difficulty, requiring both time and skill to get the honey out without throwing out a large proportion of the unsealed brood. It can be done satisfactorily only in the hottest weather.

The big tank for extracted honey is all right; but those who claim that honey put into such a tank needs no straining are "way off" under certain circumstances. My honey was strained through coarse cheese-cloth

before putting it into the tank; then after standing some time the top of the tank was carefully skimmed. But on reheating the honey in jars filled from this tank, a number of specks of comb made their appearance on top of nearly every jar. The trouble was with the thick Colorado honey. Not being a very large producer of extracted honey, the tank was some time in being filled. As honey was poured in at intervals, the minute specks on top were carried down into the honey, which was too thick to allow them all to get back to the top. If the honey had not been strained I think there would have been many more of them.

CLOSING UP THE SEASON.

As the honey season draws to a close, the question of how much more room to give to bees becomes an important one. They may not finish a whole super, and unfinished sections are an expensive nuisance. C. M. Foss solves the difficulty by simply leaving out the two outer rows of sections, placing a division-board next to the inner rows. The bees have free access to spaces on each side; but as the sections are supplied with full sheets of foundation, and there is nothing of the kind outside, they very seldom build any comb there, though they sometimes congregate there in considerable numbers. I do not like to give empty sections too near the end of the season, preferring to finish the season with extracting-combs. When I give sections at such a time, though, I generally place one or more rows of finished or nearly finished sections on each side of the super. The honey selected for this purpose is such as would grade only No. 2, so it will be little damaged by being on the hive a little longer, especially in the outside rows of the super.

NUCLEI FOR MATING QUEENS.

My first trial of the small "Swarthmore" nuclei for queen-mating was not very successful, only one laying queen being secured from a lot of seven. On the second trial I got ten queens from eleven nuclei, and since then I have had about as good success as from ordinary nuclei. I used the plan outlined by W. H. Laws in the March *Review*, my mating-boxes holding one frame $5\frac{1}{8} \times 8\frac{3}{8}$. Two of these frames just fit inside of one of my brood-frames, so that they can be used in an ordinary brood-chamber with very little trouble at any time it is desired. I did not give brood to any of them and no feeding was done, though there was a light flow of honey all the time. Each comb was supplied with what I supposed was plenty of honey under the circumstances; but in many cases it proved not enough, as it was consumed at a surprising rate. In some cases it was quietly robbed out, being carried back to the old home. I found it desirable to confine the bees to the mating-box for two or three days before releasing them, and it was apparently of advantage to have the queen several days old before she was released.

PROPOLIS.

Judging from the references to it in the bee-journals, one would suppose it to be the common belief that propolis is a substance of uniform source, composition, and character. As a matter of fact, since propolis is gathered, and not secreted like beeswax, it varies widely in its qualities, almost as much so as honey, according to the source from which it is gathered. If we will bear this fact in mind we shall avoid much misunderstanding.

As an illustration, the editor of the *Review* announced some time ago that lava soap would remove propolis from the hands. One of the largest dealers in bee-keepers' supplies, on the authority of this, advertised this soap in his catalog. Important, if true. But lava soap unaided will not remove the brand of propolis that *my* bees gather. On the other hand, there are localities less than fifteen miles away where the propolis can be readily washed from the hands with any good soap and hot water.

I usually get it off my hands by soaping them well, then pouring on a little aqua ammonia, which, in connection with the soap, takes it off readily.

Another good way, not quite so pleasant, but easier on the skin, is to rub the hands with kerosene, then use soap. You may not need these things, or they may not work with you. If they do not, remember that there is more in "locality" than some people are willing to admit.

What ever became of all the devices for cleaning the propolis off from sections by machinery that occupied so much space in the bee-journals several years ago? Most of them would probably be of some use in putting an extra polish on sections when the propolis was cold and brittle, but they were of no use when it was soft and sticky, and a very little honey on the outside of the section soon put them out of commission.

Now we have a scheme for cleaning the propolis off from sections by rubbing them on a piece of coarse wire cloth stretched tightly over a strong frame. Perhaps I ought not to condemn the plan without having tried it, but I am afraid it would be of little use unless the propolis is cold and brittle. In this country, at least, most of the sections must be cleaned before the propolis is in really good condition to scrape.

OVERSTOCKING.

To my mind, one of the most mischievous doctrines that have ever been brought out in a bee-journal is that which argues that there is little danger of overstocking a locality with bees, and that one might as well keep four or five hundred colonies in a place as a fourth that number. It is true that there are localities where this would be good advice; but for one that would be helped by following such advice, I believe there are a hundred who would be harmed. And the worst of it is, those who are harmed most may not be able to help themselves at all in the matter, but are at the mercy of those

who thoughtlessly take such doctrine for sound sense.

It is a difficult matter to tell when a field is overstocked. A location may be good enough, during the height of the honey-flow, to support a thousand colonies with ease; yet when the flow begins to fall off a little there will not be enough honey to go around. Times will come when nearly all the honey the field affords is consumed in brood-rearing. In times of scarcity the bees will be consuming more than they can gather. Especially in the spring there will not be enough of either honey or pollen to enable brood-rearing to be carried on as it should be. Heavy feeding will be necessary at times to supplement the lack of natural sources of supply, and in the end it may be found that the location that, at times, was good enough for a thousand colonies, will not support, for an average term of years, more than 100 colonies with the greatest economy and profit.

My own experience may be interesting, and perhaps shed a little light on the subject. When I came here the location was plainly capable of supporting profitably many more bees than were in it; but as my bees increased in numbers I took advantage of a vacated location to establish an out-apiary of sixty colonies only two miles away from home. It was not as far away as I should have liked; but locations are scarce here, and it was better than nothing. That season nearly every bee-keeper in the neighborhood doubled the number of his colonies, some even more than that. I decided to move out more bees and start another apiary; but before I had my arrangements completed, several new apiaries were started in my immediate neighborhood. It seemed like poor business policy to move my bees out to let them come in, so I kept all my bees at home, with the exception of the one apiary of 60 colonies which I had been obliged to move nearer home, so that it was now only 1½ miles away, though I felt pretty sure that the home location was badly overstocked. Now for results. The out-apiary, though well within the field of the home apiary, according to most authorities, and having the same stock of bees in the same hives, and with exactly the same management, averaged nearly double the yield of honey per hive that those at home gave. This experience taught me several things. First, that the profitable range of bee-flight may be much less than is commonly supposed. Second, it was very evident that the home location had more bees than it could profitably support. Now, according to many who have written on the subject, these people had a perfect right to bring more bees into this locality.

All the bee-keepers in the neighborhood own their homes, and none of the apiaries lately established have been large ones. There is no question as to the legal rights of all, and yet the number of colonies in the neighborhood must be reduced or nobody can make as much money from bees as he ought to. Let's hear from Dr. Miller.



By the time this journal is going out to its readers the great St. Louis convention will have just closed its sessions. I will endeavor to bring back short sketches of the discussions.

THE *Review* editor, in his capacity as foul-brood inspector, says he sees all kinds of hives and fixtures. One thing that he has been able to notice is that wide and deep top-bars "will prevent at least three-fourths of the combs that would otherwise be built."

THE *Western Bee Journal* has absorbed another bee-paper, the *Southland Queen*. Mr. Atchley, the publisher, will be retained as one of the writers. The *Journal* shows evidence of permanency—something that bee-papers on the Pacific coast have lacked. There is a large field for a Western bee-journal, and we wish the present one abundant success.

COLONIES NOT NECESSARILY QUEENLESS.

EVERY year we get a great lot of letters saying that colonies are queenless because there are no eggs nor brood in the hive. Beginners especially need to be reminded that average queens, especially if they be six months or more old, will taper off in egg-laying during August, and probably stop altogether in September unless they are fed or there is a fall flow of honey. A little careful search will often reveal the queen, although she will look very much smaller than she did in the height of the season, and to the novice she looks much like a worker-bee.

WHEN TO WINTER INDOORS AND WHEN TO WINTER OUTDOORS.

THE question as to whether it will be wise to winter in the cellar or outdoors will depend on conditions. A cellar should not be used if the temperature can not be kept from going below 40; and under no circumstances should one use the indoor method if the temperature outdoors does not go much below freezing, and the bees have an opportunity to fly once in two or three weeks. Continued zero weather outdoors for a month at a time with almost no warm spells requires the indoor method with uniform indoor temperature of about 45 degrees F. If the repository warms up to 60 degrees much ventilation will be required.

LOCALITY, AND ITS BEARING ON APICULTURAL TEACHINGS.

In this issue, in the department of Bee-keeping among the Rockies, will be seen

several instances showing how locality affects teachings and practices current among bee-keepers. For example, in some places there is no advantage in heating a honey-knife in hot water. In other places it greatly facilitates the work.

Again, it is shown that lava soap will remove the propolis found in one locality but not that from another. But I had not seen any references in the bee-papers that seemed to indicate that propolis was a substance of uniform source. All the text-books, so far as I know, teach the exact opposite.

J. B. MASON, THE BEE-KEEPER AND SUPPLY-DEALER AT MECHANIC FALLS, MAINE.

THERE is generally some one person in a locality who has the distinction of being the leading bee-man. To him lesser lights go for instruction and supplies. The man who holds this distinction for the southwestern part of Maine—indeed, I might say for the whole State, and perhaps a great part of New England—is J. B. Mason, of Mechanic Falls. For many years he has made bee-keeping his exclusive business, and lately he has added to it the keeping of supplies.

Many suppose that the State of Maine, located as it is in the extreme northeastern part of the country, is too cold for bees; indeed, it was bitterly cold when I called there last winter, soon after the holidays. As I rode through that snowy country I wondered if it were possible for bees to live through such intense cold. But one can not be with friend Mason long before he is convinced that bee-keeping in that bleak country—bleak only in winters—does thrive.

Mr. Mason is pleasantly situated on the Grand Trunk Railway at Mechanic Falls, in the southwestern part of the State. On arriving at the station, not having announced the exact date of my visit, I made up my mind to hunt up a liveryman to take me over to Mr. Mason's place; but the driver who was taking me up town to the hotel told me he had just seen Mason, for everybody seemed to know him, and he thought I would find him in one of the stores, and I did.

I took several photos during my brief visit; but as they had a "froze-up look" about them I asked our friend to have others taken in the summer, and these are the ones here shown.

His combined shop and store is on the edge of the town, as shown in one of the illustrations. He has just loaded up a wagon full of supplies, and is about to deliver them at the depot. He himself will be seen standing in the porch in the front of the building. On the same road, and about two miles out of town, he has a very comfortable residence situated on a rise of ground near a beautiful ravine. The residence is shown, with the barn in the rear.

Mr. Mason, besides doing considerable business in the way of selling supplies, makes a specialty of selling bees. In the view of the bee-yard he is shown as shaking a lot of bees through a tunnel into a wire-

cloth package. He tells me that these packages of bees are taken from a full colony that has a laying queen, and placed in the cellar for about six hours. During this time they become conscious of their utter queenlessness; and, being broodless and combless as well as queenless, they are in a condition to accept any queen that may be dropped in among them from a mailing-cage, for this is exactly what Mr. Mason does. He has shipped out many packages of bees having a queen that has been dropped in among them without the formality of an introduction, and he says it is very rare indeed to get a report where the queen has been killed. As she is liable to die any way in some cases, it could not be proven definitely that the bees were responsible for her demise in the rare cases reported.

Mr. Mason is a man of pleasant appearance, and, notwithstanding he has been so long engaged on the general subject of bees, he can talk as enthusiastically about them as he could when he first began to love them. His wife and family seem to understand thoroughly all the details of his business, and enter heartily into all his plans.

DOES PROHIBITION IN MAINE PROHIBIT ?

There, I came near forgetting a very important fact that I gleaned. As I rode across the border I had forgotten all about the fact that Maine was a prohibition State. At the stations I looked in vain for saloons with their familiar signs and the characteristic crowd of loafers, as I am in the habit of doing when going through country new to me. I began to wonder. Then it flashed through me that saloons were outlawed in Maine, as they ought to be everywhere. On arriving at Portland late at night I went to one of the leading hotels. I looked all over the place, but there was no indication whatever of a bar. Then I went out on the street, and there seemed to be an entire absence of the rough element that one sees where there are two or three saloons in a block. There were restaurants, of course, but there were no screens and no crowds hanging around as there is around some of our Ohio speak-easies.

I have heard many a time that "prohibition does not prohibit in Maine;" of how liquor is dealt out on the sly; but I did not see any evidence of such dealings, although I am free to admit that there are probably places where "the stuff" is kept, and where the law is violated. The fact is, no law is so absolutely iron-clad and so rigidly enforced that the provisions of it can not be violated to some slight extent. But if *all laws were as well enforced as the prohibition law of Maine* I should feel that the millennium was nigh. I tell you it was a real pleasure to go through the towns and cities of that State. Alack the day when it should ever follow the example of its sister State of Vermont! I hardly think it ever will; for I understand the good people of that commonwealth are thoroughly sick of their bad bargain.



Our Symposium on Hoffman Frames.

Is this Frame Adapted to the Needs of Everyday Bee-keepers? Conflicting Opinions from Experts.

[We have received quite a number of communications on this subject from various subscribers; and, desiring to put all of them together, we have held them till now. The reader is, therefore, in position to get a birdseye view of the whole discussion. As Mr. J. A. Green's article came first, we place it at the beginning.—Ed.]

DEFECTS OF THE HOFFMAN AS NOW MADE.

Can They Be Overcome? The Hoffman-frame Division-board or Follower Not Satisfactory.

BY J. A. GREEN.

Your editorial on page 641 gives a rather wrong impression in regard to my position on the Hoffman-frame question in saying that I believe the frame has inherent defects that might be remedied. In my article in the June *Review* I said, "Its faults are not inherent or unavoidable." That is, the principle of the Hoffman frame is all right, and it is not such a bad frame if it is properly used. In the hands of a careful man who understands the principle on which it works, and will always handle them strictly in accordance with that principle, the Hoffman frame, even as it is made now, will give very satisfactory results in most localities.

The trouble is that most bee-keepers are not careful, and will not handle the frame as it must be handled to give good results. Because of this the Hoffman frame is not as well adapted to general use as a frame that will not suffer as much from neglect. That, in a few words, is my position in regard to the Hoffman frame.

I have opened during the present season, as bee-inspector, over two thousand hives having Hoffman frames. It is not too much to say that not ten per cent of them had been kept in proper condition for easy handling. Do you wonder that I should like to see the Hoffman frame supplanted by something that is better suited to the methods of the average bee-keeper? Of the hives with plain hanging frames, there was scarcely one that was not in far better shape for easy handling than the average Hoffman.

The chief difficulty with the Hoffman frame is that difficulty of getting out the first frame. The principle of the frame requires that, at the end of each manipulation, the frames be all crowded close together at one side of the hive. A following-board is crowded up against them, leaving a bee-space between it and the side of the hive.

To remove the frames, pry back the follower and remove it, which gives room to get out the first frame. The theory is excellent, and in practice it works very well when things are new, if proper care is taken each time to keep the frames crowded together. But the average bee-keeper will not do this. He forgets to crowd up the frames. Or perhaps the follower is a little askew, so that, in the very limited space given it, one corner of it touches the side of the hive, or comes near enough to it so that the bees fasten it. Or, as often happens (I might say usually, in the case of old hives), the follower is attached to the first comb by brace-combs or because of a hive out of level. The next time he tries to get it out it can be pulled to pieces before it can be removed. The follower no longer serves its purpose, but has become a nuisance, which is generally torn out and dispensed with or left as it is without any attempt to make use of it. I have inspected large apiaries in every hive of which the follower had been purposely left out. For a little while this works better; but as propolis and brace-combs accumulate, the difficulties of handling increase, until getting out the first frame is often an exasperating problem.

You complain that I do not indicate what construction of follower would be better. There are three ways in which the follower could be made more substantial. The first is by using longer nails; and the second is by using more nails in making it up. The third (and best) way is by making it of thicker material. It would not so easily get out of shape; it would not be so easily broken, and it would hold nails better and permit of longer nails. It may seem strange to some that I should lay the fault of insufficient nailing to the manufacturer; but I believe the manufacturers generally send out nails for making them up, and so are at fault if the nails they send are not large enough or numerous enough to nail them up properly. Indeed, I am not sure but the followers are already made up. If this is not the case, it may be that the bee-keeper does not use the right nails, or use all that are sent. However that may be, I do not believe I have ever seen a follower sent out with a Dovetailed hive that was what I call properly nailed, the nails being too few and altogether too small for the service required of them. I might remark parenthetically that the same thing might be said of the frames, or at least of most of them. Many a time I have pulled the top-bar off nearly every frame in the hive before I could get one out, and the bottoms come off if they are in the least stuck to the floor. It is possible that there might be an advantage in twisting a stout piece of annealed wire, about like "stove-pipe" wire, around the ends of the follower. This would certainly make it less liable to pull to pieces.

You say it is not possible at this late date to make the hives wider, so as to allow for a thicker follower or for more space back of it. It seems to me that it is never too

late to correct a mistake, and it likewise seems to me that you have made a serious mistake which makes an immense amount of trouble, and detracts largely from the value of your hive in allowing so little room for follower and bee-space. A quarter of an inch added to the width of the hive would probably be enough to correct both of these faults, and I can not conceive of any good reason why this should not be done, except that it might make necessary expensive changes in your machinery or methods of manufacture. To the bee-keeper, even when supers or parts of hives are to be used interchangeably with those of older manufacture, it would make no practical difference, except the almost imperceptible one of looks. If the hive is wider than the super, or *vice versa*, by only $\frac{1}{8}$ inch on each side, very few would ever notice it unless their attention were specially called to the matter, and it would not make a difference of an ounce of honey in the year's crop, while the saving in time and vexation might be very great.

The necessary additional space might be secured by making the frames a trifle narrower, or by making the sides of the hives thinner, but I do not recommend either of these plans.

I do not know that I have ever seen any of your latest pattern of followers; but candor compels me to say that all of the hives I have been able to recognize as of your manufacture have contained the very flimsiest followers I have seen. As to followers in ten-frame hives, there are but few of such hives here. I remember one lot of about 35 ten-frame hives that had followers in. As they had been used only one season, they were handled with but little trouble, though I advised the owner to leave them out.

It not infrequently happens that the follower is wedged tight against the frames, and wedges and all propolized so thoroughly that it is almost impossible to get any thing out.

I do not think that there is an excessive amount of propolis used here—certainly not more than I have been accustomed to elsewhere; and the fact that many, myself included, get along all right with frames having close-fitting ends, shows that propolis has nothing to do with my condemnation of the Hoffman frame. I have said that the trouble is not so much with the frame as with the way it is used. I should also include with this the way it is put together. The Hoffman frame should be nailed up so that one V edge is on each side of the frame. Of those who pay any attention at all to the way they nail them up, perhaps the majority put both sharp edges on the same side. When the proper way is explained to them, these latter say that they expect always to put them back the same way. If they do this, of course it would not make much difference; but they are very liable to get turned around sometimes. Whenever two sharp edges come together they are very liable to slide past each other, which increases the difficulty of handling.

The other eccentricities which inspectors sometimes come across, such as putting frames together without any nails at all, should perhaps not be considered the fault of the frame, though they make more trouble with this frame than with some others.

In my criticisms of the Hoffman frame I have tried to be perfectly fair, and at the same time tell the whole truth, for I feel that that is what you want and what the interests of bee-keepers require.

Grand Junction, Col.

WHY THE HOFFMAN FRAME IS POPULAR IN CUBA.

It would be quite interesting to know all the reasons why in Cuba mostly all kinds of frames have been gradually discarded by the bee-keepers to give place to the Hoffman, which, with very few exceptions, we might say is now exclusively used in that island.

I have used almost all kinds of frames, and finally decided to adopt entirely the Hoffman for use in my apiaries, which formerly I used to manage personally. Now being engaged in other business I have to rely almost entirely for the management on outside help under the management of an apiarist. In Cuba it is quite a difficult matter to obtain competent help to work with bees; and especially at extracting time we have to make use of help that is not familiar with the handling of frames. All apiarists should know how difficult it is for such help to space properly the frames back into the hive after they have been extracted. When you have to employ such help, or for a beginner, I do not know of any frame better than the Hoffman, as one might say that it helps itself to be spaced right. Unless this helper is very careless he is sure to place back and space right the frames if the apiarist has been careful to show him practically once before how to do it. It certainly is a satisfaction to know that all the frames are properly spaced in the hives.

A great deal of attention is being given to the inconvenience of the thick top-bar of the Hoffman frame. I have read with interest the different opinions of the several writers on this subject; and from my personal opinion, based on my past experience in the handling of the different kinds of frames, I give credit to the thick top-bar for causing fewer burr-combs. Before I adopted the Hoffman frame I used largely the old-style thin top-bar, and my experience was that in no time the bees invariably had the top-bars of the frames in the lower story so tightly fastened to the bottom-bars of the frames in the upper story that a great many bottom-bars broke off when the frames were being taken out for extracting. This was such a nuisance, and caused so much inconvenience, that I would have considered advisable the change of the bottom-bar into a thicker or stronger one. Since the adoption of the Hoffman frame I have no cause for this complaint, although the bottom-bar in the Hoffman frame is not

thicker than was the one on the old-style frame I used before. The thickness of the top and bottom bars of the actual Hoffman frames taken together does not really take any more space than the thin top-bar with a thicker bottom-bar would have taken. This last change, if I had made it, would not, probably, have remedied the building of burr-combs between the frames of the lower and upper stories.

I would not claim that the Hoffman frames will prevent burr-combs entirely, nor that the reason first given is of the same value to the small or intelligent apiarist that works his bees himself without any assistance, as it is to me.

In shipping bees I do not know of any other frame that will equal the Hoffman. In Cuba, where the country roads and conveyances are not of the best, the moving of bees is quite an item to be considered, especially as most bee-keepers, sooner or later, with the fast increase they obtain, have to consider the establishing of apiaries or the selling of bees. Prevention of increase in Cuba soon becomes a problem, and it is not unusual to see an intelligent apiarist increase from a comparatively small number of hives up to the thousand mark.

In the last four years I have shipped to different points of the island over three thousand nuclei besides a large number of full colonies of bees, either by steamer, rail, or by carts over rough roads; and in case of either strong colonies or nuclei I have always attained the best result with the Hoffman frame. It requires less work and time to prepare the same for shipment, all that is needed being a small strip nailed across the projecting ends of the frames, and it will remain fastened and better secured than any other frame I have used. In fact, I have not had a single comb broken on Hoffman frames, while in the same shipment I must say some combs in other kinds of frames broke.

I notice that some objection is being raised to the Hoffman frames on account of propolis; but we do not find this objection in Cuba; in fact, apiarists using well-made hives are not really much bothered with propolis. The bees seem to put all their energy into gathering propolis to cover cracks and crevices in the hives; but we do not find any trouble of this kind with the frames.

F. H. DE BECHE.

THINKS IT THE BEST FRAME NOW IN USE.

Mr. Root:—If I differ with any of your correspondents I give you fair warning that they must give up, for I can't. I presume I am punching up a hornet's nest, but nevertheless let us have the plain solid facts.

In 1893 a number of your subscribers, among whom was one Dr. C. C. Miller, advised that the top-bar of the Hoffman frame be made $1\frac{1}{8}$ inches wide, and full $\frac{3}{4}$ inch deep at the sides. Why was that? Simply because a deeper top-bar gave better results by the exclusion of burr-combs, and cut a

great figure in lessening brace-combs, or combs built between the top-bars. This was, in my judgment, a step in the right direction—that of making the most correct bee-space in which the bees are the least liable to build comb or deposit propolis.

I am sincere when I say that, in my opinion, all things combined, the Hoffman frame is by far the best frame now offered to the bee-keeping fraternity. I note in the *Bee-keepers' Review* that Mr. Williamson says experience fails to apply when it comes to a movable frame. For rapid handling, my experience proves, too, that the Hoffman frame is the best one for rapid handling in pairs of 2, 3, and 4. Mr. Abbott also says that I pronounced the Hoffman frame a humbug ten years ago. If Mr. Abbott is correct in his condemnation of them, then I have to confess that the rank and file of the bee-keepers prefer to be humbugged. It is the strongest frame we have, and destroys the least number of bees, and kills fewer queens while manipulating them.

As for hired help in the apiary, I should like to call attention to the fact that we have to hire all kinds of help to do the work with 5000 colonies of bees; and what kind of spacing would take place with frames not self-spacing? With the Hoffman, one can not do bad spacing. I believe if those who condemn the Hoffman frame so strongly would use nine frames in a ten-frame hive, with two plain division-boards, all trouble would flee like the dew before the sun.

Section-cases come off almost as clean, and free from brace-combs, as when put on. The hive can be quickly arranged for shipment with the Hoffman frame—no nails to run the uncapping-knife against. All in all, the Hoffman frame has many advantages over the disadvantages of self-spacing frames. Give us cold facts, and let us not improve this good frame backward, as have been the bee-smokers. A few more such improvements on smokers as we have had of late, and we practical bee-keepers will be obliged to resort to the old turkey-wing and rag.

C. E. WOODWARD.

Guanabana, Cuba.

HOFFMAN FRAMES NOT STRONG ENOUGH.

On page 694 is the following: "By the way, Hooper Brothers use nothing but Hoffman frames for extracting. Indeed, they consider them far superior to any other. It is a mistaken notion that such frames are not adapted to hot countries, or wide spacing to get fat combs for extracting. The fact that some of the largest producers in the world use them shows that they are not so difficult to handle as those who have not used them extensively suppose."

In answer to their style of reasoning, that, because a man is a large producer, he knows just what is best, or the best way to do a thing, I will tell something that happened in Cuba.

Extracting was going on at a ranch. One

of the big bee-keepers from the States, who was on a visit to the island, was there. He came out into the yard, and saw a hive opened. The combs were fat and heavy. They were loosened, caught up by the ends, given a shake, and placed in the super on the wheelbarrow. He said, "Is that the way you get bees off the combs? Don't you have a brush at all? You can't do that where I came from." After watching for a short time he said he thought bees could be brushed off faster than when shaken. So he got a brush, and the two worked together. The result was, the man that had no brush put two combs into the super on the wheelbarrow to one of the man with the brush.

Now, the Hoffman or the Miller self-spacing frame is all right for some bee-keepers. They are the ones who remove the bees from the combs with a brush, and take their time in uncapping. But take the Hoffman frame as it is made to-day. Have seven of them in a ten-framed super. Will they stand a shake that will remove the bees? They do not. Then when it comes to uncapping their combs they are fat and heavy. The top-bar is covered with wax. The whole comb *should* be cut down *even* with the top and bottom bar.

The way to get the wax from the top-bar is to strike a quick downward cut with the honey-knife. What is the result? It is, after being shaken a few times they are minus the ends of the top-bar. After being uncapped a few times they are self-spacing no longer.

Now, it is not my object to try to change everybody's ideas as to religion, politics, or the style of frame he should use in a hive. The Hoffman frame is all right in its place—that is, for comb honey, and will do for the small producer of extracted honey.

Braceville, Ill.

LESLIE BURR.

HOFFMAN UNIVERSALLY LIKED.

Referring to the matter of Hoffman frames, I can't for the life of me see how such intelligent men as W. Z. Hutchinson, J. A. Green, and others can feel that the Hoffman frame is a nuisance, or even difficult to handle. There never was a frame in use that was so universally liked and used, or one that modernized bee-keeping to the extent that this frame has. This applies particularly to the great mass of bee-keepers, many of them not having the experience of the above-mentioned men. In other words it was and is a God-send to the novice. I have had in use at least 2500 of them at a time, and I would not replace them with any other frame, even if these cost \$5.00 per 100, and the other were donated. It sounds too much like "inch strips of foundation in the brood-frames" being better than full sheets. I remember when this was advocated. No, don't change; continue to put them in every hive you send out for me and my customers, and I feel I can safely say for the world, and you will be doing the bee-keepers a favor that will be appreciated by 99 out of every 100.

They are the best frames ever made, all things considered.

GEO. E. HILTON.

Fremont, Mich.

HOFFMAN FAR AHEAD OF THE UNSPACED.

We have been interested in the discussion of the Hoffman frame. We have used it since its introduction, and for convenience in handling we think it far ahead of the unspaced frame. We are not troubled to any great extent with propolis, and so have no complaint to make on that point. From the standpoint of the jobber, we find our sales at least twenty to one in favor of the Hoffman, leaving the Danzenbaker frame out of the question. It strikes us that, if the hive-cover question is settled in as satisfactory a manner as the Hoffman does the frame question, we shall have reason to rejoice. Two of its worst features as named by Mr. Somerford on page 489—"broad end-bars," and top-bars so thick that "they place too much wood between the brood and the super for comb honey"—have advantages that more than counterbalance. We can hardly believe that manufacturers and dealers could force an unsatisfactory article on the unwilling buyer. There is no cemetery larger than that of "improved bee-hives" and things kindred. These bear evidence of a bee-keeping public that won't be forced.

M. H. HUNT & SON.

Bell Branch, Mich.

TRANSFERRED FROM LOOSE FRAMES INTO HOFFMAN.

Mr. Root:—You wish me to state briefly my experience with the ordinary loose thin-top Langstroth frame as compared with the Hoffman. I should not want to use the ordinary loose thin-top Langstroth frames any more at any price. We transferred several hundred colonies out of these frames on to Hoffman frames the past spring. As we do not have very much propolis here we think that the Hoffman frame would suit us better with a long top-bar and square edges to the end-bars instead of the V edge.

Denver, Col.

F. RAUCHFUSS.

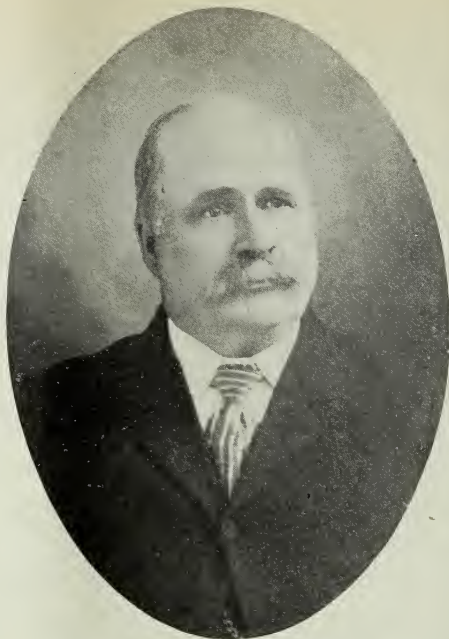
Hoffman frames are all right for me. I took out frames this spring that had not been moved for three years, and had no trouble with them.

EDWARD WILSON.

Whittemore, Mich.

[I thought at one time, as I was a manufacturer of supplies, that I would take no part in the discussion; but some questions are raised that call forth some answer. At the risk of being accused of grinding my own ax I will attempt to state the manufacturers' side of the matter.

As I understand Mr. Green, the leader on the negative side of this question, the principle of the Hoffman frame is all right, and in the hands of a careful bee-keeper it will give very satisfactory results in most localities; that it suffers from neglect and misuse, and, in his opinion, the old hanging frame will suffer less from such neglect,



J. B. MASON.—SEE EDITORIAL.



J. B. MASON'S STORE AND SHOP; WAGON LOADED WITH SUPPLIES TO GO TO THE DEPOT.



J. B. MASON'S APIARY.



J. B. MASON'S RESIDENCE.

and therefore give more satisfactory results to the careless user.

Queer how differently we look at these things! Before I introduced the Hoffman frame (and I suppose I had a good deal to do with it) I was very much disgusted to see how the average bee-keeper spaced the unspaced frame of the Langstroth type. In dozens of yards that I visited some 15 years ago I found in many cases the regular Langstroth or Simplicity frames were spaced all the way from two inches from center to center clear jam up together, leaving the frames or combs in actual contact, and all built together. The farmer bee-keepers and others who did not keep posted almost invariably had their loose frames spaced in such a way they could not be removed without removing the whole set; and then such a mess! And then, too, I found that there was not one in ten that knew how far to space the frames apart, and so most of them guessed at it. Such unequal spacing, bulged combs, and thin ones, led me to favor some sort of self-spacing frame that could not possibly be spaced too close; and when I saw the Hoffman frame in use, and how, in the hands of the careless and indifferent, they were spaced evenly—combs like boards—I became convinced that a frame that could not be spaced too closely, like the Hoffman, *must* be far better than one that could be jammed up against its mate. As will be seen by the testimony offered by several of the writers in this symposium, actual experience in some instances at least seems to bear out the opinion that I formed in the early nineties. Note, for example, what Mr. F. E. de Beche says regarding the adaptability of the Hoffman frame to the incompetent help he has to put up with in Cuba. I suppose that, if there is any place in this wide world where one will meet with poor help, it is in Cuba. Then note what Mr. Woodward says in the next to the last paragraph in his article. Next see what Mr. Geo. E. Hilton has to say.

I will admit that the division-boards as originally sent out with the Hoffman frames were defective; but for the last three or four years the Root Co., at least, has made a board that is quite different from the first ones. While the new board was designed with special reference to strength and facility in removing, I think perhaps it can be improved and yet go in the hives as now without changing width. We will give the matter our careful consideration.

Shall we make the hive wider to accommodate a slightly thicker follower? I do not suppose it would be possible to lay before one not a manufacturer the exacting demands made by bee-keepers generally on the supply-manufacturer, and I give it up; but I will say this: When we have made slight changes in the style of hives or supers already in use, we have called down on our heads all kinds of complaints, not to say abuse. While friend Green would not object to having a brood-nest slightly wider than the super, there are hundreds of bee-keep-

ers who would make a big scold. It is, therefore, better, in my opinion, to use one less frame, and use two followers, as suggested by Mr. Woodward; or, better still, construct a follower that will go in the present space that will be stronger than any sent out yet.

About the question of the number and size of nails, the bee-keeper can hardly complain that he does not have enough. We furnish more than enough of nails as large as the material will permit to make good solid nailing. In the case of the division-boards, the nails are long enough to go *clear through and clinch*, except in two places, and have been so for years. The nails are not put up in little packages—just enough for division-boards, and just enough for something else. They are put up in several large packages; and if one follows the printed directions he can not very well go wrong. If one is so careless as not to nail up even Hoffman frames, he will be equally careless with the Langstroth or any other style of frame. If there are very many people out your way, friend Green, like this, I don't wonder that they make bad work in the hive. If you will send in their names we will be tempted to give them free tuition to Correspondence Course in Bee-keeping. Such people need a little "educating."

I am glad that Mr. Green has introduced this subject, for no doubt much good will come from the discussion. There are no appliances made yet but that will bear some improvement. Honest criticism from honest men always paves the way for improvement, and the manufacturer who will give them (the criticisms) fair hearing may profit by it; and the one who is so egotistic as to think his wares are "good enough" may get left in the race.—ED.]

THE MILLER NAIL-SPACED FRAME.

Nails vs. Staples; Splints for Staying Foundation.

BY DR. C. C. MILLER.

There seems to be an impression in the minds of some that the Miller frame differs in nothing from frames already listed in the catalogs except that nails are used as spacers. The nails are by no means the chief difference; indeed, staples are used as well as nails, the staples being used for end-spacing. One feature of the frame is that the same width, $1\frac{1}{4}$ inches, prevails throughout—top-bar, bottom-bar, and end-bars all being the same in width.

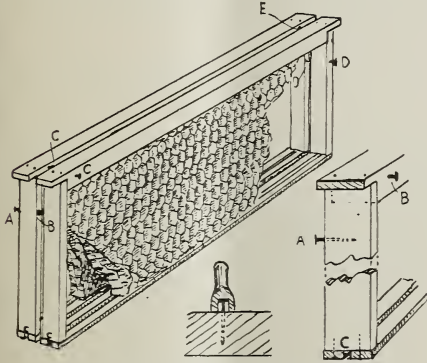
Except for the saving of lumber I know of no reason for having the bottom-bar or the end-bars any narrower than the top-bar. When end-bars or bottom-bars are further apart than $\frac{1}{4}$ inch, the bees sometimes build past them or between them. With the $\frac{1}{4}$ -inch space this does not happen. A possible objection to so wide a bottom-bar is that the dead bees in winter do not so readily drop down through the $\frac{1}{4}$ -inch space.

The top-bar is the regular thing, $1\frac{1}{2}$ wide and $\frac{3}{8}$ thick, with the usual kerf for foundation and another kerf for the wedge.

End-bars are $1\frac{1}{2}$ wide and $\frac{3}{8}$ thick. The extra rigidity pays well for the extra thickness. Besides, it will not split with the spacing-nails.

The bottom-bar is in two parts, each $\frac{1}{2}$ in. wide and $\frac{1}{2}$ inch thick. That allows a space of $\frac{1}{8}$ inch between the two parts to receive the foundation.

Foundation is cut to fill the frame *entirely* full, and enough more in depth to allow the foundation to pass up into the kerf of the top-bar and down between the two parts of the bottom-bar. Five splints, $1\frac{1}{8} \times 1\frac{1}{8}$, im-



DR. MILLER'S NAIL-SPACED FRAME.

bedded vertically in the foundation, prevent sagging. It does one's eyes good to look at one of these frames built entirely out on all sides, with never a pop-hole along the bottom-bar. But if such a frame of foundation be given to the bees at a time when little is doing, they amuse themselves by digging the foundation away at the bottom.

The end-spacing is the regular Medina affair—staples driven into the end-bars immediately under the top-bar, and the ends of top-bar cut short. I know of nothing better.

For side-spacing I use common nails because I can't get the nails I'd like. The nails are driven in by a gauge, allowing them to project $\frac{1}{4}$ inch. You ask, Mr. Editor, how I get around the difficulty of the nails punching into the wood or pushing further into the side of the frame to destroy exact spacing. Look at the nail I inclose (if I don't forget it). That head is $\frac{1}{4}$ inch across, and you couldn't crowd frames together with enough force to make that head sink into the wood of the next frame. Indeed, so wide a head is unnecessary. Some that I have in use are $\frac{3}{8}$ across, which is better.

Now compare that nailhead with a staple. There is probably ten to twenty times as large a surface on that nailhead as on the end of the staple at the point of contact. In conversation with Mr. Morley Pettit, he was favoring the staple, if I understood him correctly, and I asked him if the head of the staple never sank into the wood of the adjoining frame. He frankly said it did. The

nailhead does not. Just try *pushing* that head into the softest pine you can find.

Will not the nail be driven deeper into the wood when the frames are crowded hard together? Hold that nail beside a staple, and see which you think would be driven in with greater ease. The nail is $\frac{1}{2}$ inch thick, I believe, and the galvanizing doesn't give it a smooth surface to drive in easily. Of about 5000 nails in use, I think I have known just two to be driven in any deeper, and they were driven away in. The wood was split, I think, in one case, possibly in the other. The only wonder is that the wood doesn't split oftener. The ideal nail would be one with a head $\frac{1}{2}$ inch deep, so that it would be driven in automatically the right depth, in which case a lighter nail could be used. I am not longing for a nail of that kind as much as formerly, for the nails I now use have stood the crowding-together of the frames for several years, and hard crowding at that. But I think I'd be happier if I could get the right kind of nails.

Four nails are in each frame. Hold the frame up before you, and two are on the side next you at the left end; two on the opposite side at the right end. The upper nails are in the top-bar a little above the center; the lower ones in the end-bars, $2\frac{1}{2}$ inches from the bottom. Can you get fixed distance with smaller impinging surface?

Marengo, Ill.

[I do not know that I ever raised the question that the nailheads themselves would punch into the wood of the opposing frame; but I did say something to the effect that the *other* end of the nail might be forced into the wood still further, destroying the exact spacing; but that argument is entirely set aside by your actual experience, which is always worth tons of theory. The staple has two legs, and each of the legs is barbed. As between the staple and the nail punching into the wood, I do not suppose there would be any difference; so I think we may as well brush aside for all time this objection.]

But, doctor, you have not alluded to the one fatal objection of the nails and nailheads to the extracted-honey producer. They, as a general rule, on account of the uncapping, prefer to dispense with all kinds of spacing devices; and even the wooden projections on the Hoffman frames are not looked on with much favor by many of that class of honey-producers. Your nail would catch an uncapping-knife, especially so many of them, worse than any spacer in use. You talk nail-spacing to an extracted-honey man, and you might as well throw a red rag before a bull.

Well, the staple is not quite so bad, because it has a rounded edge. Then, moreover, it permits of the frame sliding into position better than a nailhead, which has a tendency to *hook* or *catch* on to the next frame. This is not mere theory, but the result of observation and experience I have had with the two kinds of spacing, when I was experimenting with the idea of selecting

one or the other for those who could not tolerate the Hoffman frame on account of the excess of propolis in localities like yours. Now, having said this much, I am prepared to believe that, for your locality, I should like your frame, for the production of *comb honey* exclusively, as well as any thing I know of.

I am inclined to think your plan of staying up foundation by means of splints is excellent. I will confess I did not enthuse very much over it when you first introduced it, believing it were better to await the results of your years' experience. That you continue to look upon it with favor, and that the bees do not gnaw away the comb along the wood to any great extent during a dearth of honey, as I understand they do not, are points worthy of your careful consideration. But even then the wire will have the advantage of holding the comb a little more securely for extracting and for shipping, because it is *attached* to the frame; and it would take a fearful slam or bang to dislodge a comb from the frame—so strong as practically to smash the frame itself. Extracting-combs, as I know from observation in California, and as I know in shipping bees, are subjected to some severe strains, and perhaps the only possible objection that may still stand against the wooden splints is this one. I am well aware of the fact that you are a producer of comb honey, and that your argument is that it is better for *you* to use what is best adapted to that specialty. But if you were like some bee-keepers, and in some localities, you would find it necessary to use a frame that you could use interchangeably for extracting and for comb-honey purposes.—ED.



HOW TO DISINFECT HIVES.

I have an opportunity to purchase a party's bees and outfit, including several empty L. hives. There is no evidence of disease in the hives now occupied, but the empty hives *may* contain germs of untold horrors. Would dipping these hives in a strong boiling solution of concentrated lye, as described in the A B C, for removing propolis, destroy, for instance, foul-brood germs?

I have read somewhere on the subject of "Uniting," that, if both colonies be liberally sprinkled with sweetened water to which sufficient extract of peppermint has been added to give a strong odor, all conflict would be avoided. Is there any merit in this claim?

GEO. MCALLISTER.

Mayfair, Ills., Sept. 6.

[Strong lye would hardly be suitable for disinfecting the hives. Your better way is to smear the inside of each hive a little with coal oil, touch a match to it, and, just as soon as the inside of the hive is blackened (not charred), clap the cover on, but the cover should be scorched in the same way. A more convenient method is to hold the hive over a bonfire with a long pole, exposing the entrance to the flame. When the inside of the hive just begins to take fire, dash about a gill of water in and clap the cover on. This will check the fire instantly.]

Peppermint is sometimes used for uniting. With ordinary pure Italians, nothing need be used, and, generally speaking, I would unite any colony, whether hybrid or Italian, by putting them together. If they fight, smoke them a little.—ED.]

THIN TIN AS A MIDRIB FOR COMB FOUNDATION.

Can not very thin tin be used for foundation instead of wax, and a coating of wax be put on it? It would be much stronger, and not liable to break. I have to confess that I am not smart enough to extract the honey without breaking the comb. I used foundation the size of the frame, and wired it; but before I get up speed enough to throw the honey out, the comb is ruined by breaking.

A. H. FRANK.

Red House, N. Y., Sept. 12.

[About 35 years ago our Mr. A. I. Root tested tin as a base or midrib for foundation. He even went so far as to run a thin grade of metal called "taggers' tin" through an old foundation-mill. He coated it with wax, and gave it to the bees. He secured combs, but found the expense of the product was altogether prohibitive, and no better than ordinary foundation sustained by means of wire at a mere fraction of the cost of the tin backing. It actually used more wax, and was colder for the bees. Then Moses Quinby, before A. I. R., had what might be called all-metal combs.]

This field has been gone over thoroughly, not only by A. I. Root, but by hundreds of bee-keepers; and the general consensus of opinion has been that there is no better way to stay foundation than by the use of wire or wooden splints, as recommended by Dr. C. C. Miller.—ED.]

WHY THE COLONY DIDN'T BUILD CELLS WHEN MADE QUEENLESS.

Will bees start queen-cells at this time of year? I took a queen out of a hive, and left it six days so I could get some royal jelly to start some queen-cells; but they never started one. What must I do to get the bees to start queen-cells at this time of year?

Alto, Mich.

OSCAR SMITH.

[You do not say whether there was any brood of the right age from which cells could be started at the time you removed the queen. Queens are apt to stop laying during the latter part of August and the

late fall months. It is possible there was nothing in the hive from which the bees could build cells. If there are no eggs or brood of any kind the colony should be fed a little every day for about a week. This would probably start the queen to laying, then you could remove her and get cells.—Ed.]

RED-CLOVER BEES.

On page 656 G. M. P. asks Dr. Miller if it is possible to get bees that would work on red clover. I have had the red-clover bees for two years, and they have worked red clover both years. It was when white clover was in full bloom all around, and yielding honey, that I saw them on the red clover. I had five acres of alsike in full bloom at the same time. They will work red clover without any doubt. I have seen them shove their heads down into the blossom, and just stay there and drink; but I don't claim that they can get all the honey there is in red clover; but they can get part of it. All the fault that I have to find with them (and that is not a bad fault) is this: If you give them plenty of super room and a wide entrance they are not apt to swarm. I have had but one natural swarm in two years. All the way I can get increase is to resort to the "shook-swarm" remedy. I got my start of red-clover bees from J. P. Moore, of Morgan, Ky. I have been thinking that, if I could find a golden queen whose bees would work red clover, I would cross them with my bees to avoid in-breeding. My neighbors have been telling me that they have seen my bees on their red clover. One man told me there were so many bees on his red clover while he was cutting it for hay that they bothered his horses. I believe every bee-keeper ought to breed from the longest-tongued bees that can be found.

Velpen, Ind.

W. T. DAVESON.

DOES A QUEEN MATE MORE THAN ONCE?

This question is important to those who wish their purely bred queens to be purely fertilized once for all, with no risk of a future spurious progeny. I would add my testimony to that of those who have known a queen to go out for mating, and return with apparent signs of success, and then to repeat the performance after a few days' interval. For many years I have looked into this matter, and my records show several instances of this second mating, or what Mr. Whitney, p. 550, calls "copulation without fertilization." And now, while your correspondents have been discussing this question I have had another instance of the same thing.

Prof. Phillips says, p. 286, it is necessary "to get down by the hive every afternoon during the time of flight, and stay there until the queen is seen to fly and return." That is just what I did not have to do. Instead, I watched the queen from the time she came out of her cell until her final departure, many times each day, and sometimes at night;

and the result was similar to what I had seen before.

May 30, 9 P. M.—Fine dark queen appears.

June 2, 12 M.—Queen shows great activity; follows a crowd of young bees to the exit, looks out, and retires.

June 3.—Bees begin to encircle and caress the queen. After an hour of excitement she took flight about 1 P. M., and in ten minutes returned with no evidence of success. An hour later she went to the exit but did not venture forth outside.

June 5.—Queen made flights at 12, 1, 2, and 3, being absent from ten to twenty minutes, the last time returning with a small appendage which the bees removed in half an hour. The substance came away entire.

June 6.—Queen takes another outing, and came back no more.

In very many cases of successful mating I have noted always that, as Baron von Berlepsch puts it, "the signs of copulation stand far out." (By all means see Langstroth, p. 126, note—I do not find the passage in Dadant.) But in these cases of unsuccessful mating, the appendage, although conspicuous, is much smaller than in the former cases, and is speedily plucked away by the bees instead of being gradually and wholly absorbed.

Whether a queen, after due impregnation, and after beginning to deposit eggs in the cells, ever finds it necessary to take another mating-flight, is a different question, admitting of no mere theory or guesswork, but calling for accurate and repeated observation to establish a fact. Meanwhile, there is no occasion for anxiety; for if a queen's wings are clipped she can not elope, and we may trust that our favorite strain of bees will continue uncontaminated until the scientists shall have discovered or invented some process of mating within the hive.

Hopkinsville, Ky. DANIEL F. SAVAGE.

ONE FAULT TO FIND WITH THE FENCE SEPARATOR; FOUL-BROODY HONEY NOT DISINFECTED BY BOILING.

One fault of the fence separator is the fastening of the cappings of the sections to the cleats on the fences; and when a fence is taken out the capping is broken, and leaking results. I think if the cleat were narrower so it would not overlap the sections, it would not happen so much.

I have fought foul brood for five years past, and kept my bees (my neighbors' bees are gone), and I have experimented several times with foul-broody honey. I first put the combs through the wax-extractor, and then boiled the honey and fed it back, and every colony so fed became diseased again, while those fed sugar syrup were healthy. Inspector France tells about cleaning up 200 colonies, feeding back the honey, and having bees to work again with the loss of only unhatched brood; but how many of those 200 remained healthy he does not say. I say, shake foul-broody colonies early in the first honey-flow, or feed sugar syrup and shake

all diseased colonies in rotation at one job, and do not skip about the yard treating separate colonies perhaps a week apart. Get things ready, and do the job all together till the disease is under. If a colony goes wrong, shake it and render combs into wax. The wax, when made into foundation, I have no fear of; but the honey, I am satisfied, is bad to feed back. W. S. COMRIE.

Johnstown, N. Y., July 25.

[Once in a great while we get reports of combs built to the posts of fence separators. This difficulty sometimes occurs in some localities and with some methods of management. If the hives are very much crowded for room the bees will do this somewhat; but, after all, we have had many reports of comb attachments from sections to old-style wooden separators.

We have had several reports of how diseased honey, after being boiled, transmitted the disease again to colonies to which it was fed. Inspector France is an experienced foul-brood man, and probably realizes the very great importance of boiling the honey thoroughly, and for a sufficient length of time to disinfect it. Ten minutes' boiling has not been sufficient to kill the germs, in some reports we have had, while an hour's boiling is usually deemed sufficient. A good deal will depend on *how* the boiling is done, and very possibly Mr. France can accomplish the work of disinfection in a few minutes. — ED.]

NEW METHODS OF CURING FOUL BROOD NOT SUCCESSFUL.

I have been trying George E. Hinckley's plan of curing foul brood, but with no success. The spraying seems to keep the disease in check, is all. I also fumigated combs, and gave to a healthy colony; but the disease appeared at once on comb given. I followed Weber's directions. For a fumigating-box I used a wooden skeleton covered with soldered tin, with small door underneath. It is surely tight enough. See Hinckley's article in Dec. 1st issue, and p. 1014, 1903. You will notice Mr. Haines cures black brood, but says nothing about curing foul brood by the fumigating process. I think I'll try the old plan of curing it next year. Do the decayed larvæ still retain the sticky character after being fumigated? Those I tried did. F. W. MORGAN.

De Land, Ill., Aug. 5.

[Decayed larvæ, so far as I know, will still retain the sticky character after being fumigated. We should be glad to hear from you further as to whether the formalin method of disinfection proves satisfactory. — ED.]

SAINFOIN AS A HONEY AND HAY PRODUCER.

I quite agree with Mr. Adrian Getaz, page 752. Sainfoin deserves all that he has said of it. It is largely grown in England for hay; and if the land is suitable, very large crops are obtained; and as it roots deeply in

the soil it stands a drouth better than most crops grown for hay. Sainfoin yields a large amount of most excellent honey; in fact, many prefer it to white-clover honey, and it seldom or never fails. The second crop comes at a time when there is little else for the bees to gather from. In England it is more universally grown than lucerne, or alfalfa, as it is called in the United States. I feel sure if some of your readers would try an acre or two of sainfoin they would be pleased with the result.

Being a perennial, when once established it lasts for years if a little top dressing is given occasionally. JOHN M. HOOKER.

Philadelphia, Pa.

EXCELSIOR TO KEEP BEES FROM DROWNING IN BEE-FEEDERS.

At the close of the season there are always more or less colonies which are short of stores; and under the circumstances the apiarist must supply the necessary food for such colonies. For the past few years I have been trying different feeders and various methods of feeding, finally purchasing a lot of tin pans holding about five pounds of feed which I set in the upper story above the brood-frames. After filling I take a fair-sized bunch of excelsior (new and clean) spreading it over the pan and around the sides so bees can have easy access to the feed. By this method you can refill the pan without removing the excelsior, and feed any amount with scarcely any bees drowning or loss of feed caused through leakage in using wooden feeders.

When through feeding remove the pans; tier them up, and place them in a remote place for further use. This does away with cloth or floats to keep bees from drowning, and is quick as well as economical.

Akron, O., Aug. 30. A. T. HALTER.

[This is a most excellent suggestion. As soon as the feed is consumed, more can be poured right into the pan, and there would be no danger of drowning the bees. I will endeavor to have this idea incorporated in a future edition of our ABC of Bee Culture. — ED.]

KEROSENE FOR BEE-STINGS; ALSIKE HONEY.

I saw on page 708 that kerosene is good for robbing. It is also the very best medicine for bee-stings that I have ever tried.

In GLEANINGS I have read all sorts of praise of alfalfa as a honey-producer; also white or German clover; but I never read any praise of alsike. With us it beats white clover, and makes a finer grade of honey. Of course, the largest flow of honey we have is from buckwheat and goldenrod. We get about 2 lbs. of this to one of clover and basswood. MYRON B. WOLPERT.

Blanchard, Mich., July 27.

[Never read any mention of alsike? That is probably because you are not an old reader of bee-papers. Some years ago our col-

umns were filled with it; and even in the last year or so we have had articles speaking of it very highly. That alsike is one of the best honey-plants in the world has come to be so generally accepted that very little is said about it.—ED.]

1. How long is it after a swarm goes out before the young queen is ready to take her wedding-flight?

2. Is the Carniolan any different from the common black bee? If so, where do they come from?

3. Can a worker queen usually go through a queen-excluder? H. R. MCGARRAH.
Hanna City, Ill.

[1. No definite rule can be given here, as a good deal would depend on conditions; but, generally speaking, the young queen would be ready to take her flight within four or eight days. If she hatched about the time the swarm came forth, and had been held back in the cell, she might fly within three or four days.

2. The Carniolans, to the casual observer, would look about the same as the common black bees of this country. They are a little different, however, and quite different in characteristics. They are gentler, generally very quiet, being very much like the Italians. Their bodies are more of the bluish cast rather than of the brown. They came from Carniola, Austria.

3. By "worker queen" you mean fertile or laying worker, probably. There is no reason why such queens could not go through perforated metal the same as any bees.—ED.]

AN INTERESTING CASE OF FOUNDATION.

Some time ago I got some foundation from America; and on giving full sheets to my bees they drew out the fine cells which I afterward found contained nothing but drones. On half-sheets being given they drew out the foundation into drone-cells, and pieced out the rest of the space with cells $\frac{1}{2}$ smaller, which hatched out into workers all right. I enclose a small piece of foundation, of the bees' own manufacture, to show the size of cell. What gets me is that the queen-excluder is just right. I have watched the young ones hatch out, and they are much smaller, it seems, than the adults. Do you think this is the solution, that they grow, after hatching out, to the size of the American bee?

Would the introduction of an American queen get over the difficulty by enlarging the species so as to get a bee that would take kindly to the American foundation, although at the beginning the first batch would have to be hatched in the old (smaller cell) comb? or would it require a swarm from America? GEORDY.

Shanghai, China, July 8.

[We have examined the samples of foundation that you have sent to us. The natural comb base which your bees made shows six cells to the inch, while worker bees of

this country require five cells to the inch. It is not much wonder that your bees were confused and reared drone brood on the regular foundation having five cells to the inch; nor is it strange that they should piece out the comb with smaller cells. It is evident the ordinary foundation will not answer for your bees.—ED.]

A SWARM THAT WOULDN'T STAY HIVED; NOT ROBBERING BUT PLAYING.

My bees played for me a peculiar freak in June last. One colony swarmed. I fixed them up nicely (as I thought) for house-keeping, and went about my work, about 10 A. M. At 4 P. M. I saw all going back to the old hive; in three days they came out again. I hived them again, and again they came out and alighted close to where they had settled before. I tried to hive them again, but they would not stay, and finally they went away. What was the cause?

About a month after this, the colony that these went from I discovered in great commotion—more so, if possible, than when they swarmed. I thought they were being robbed. I closed the entrance to enable them to ward off the intruders. In a few minutes they had all settled down as quietly as though nothing had been occurring, and remained so. What did that mean?

Some three days later I observed the same actions on the part of bees that I had hived about four weeks before.

Connersville, Ind. JOHN T. WHITE.

[Bees bent on swarming will sometimes cut up peculiar freaks. No explanation can be offered.—ED.]

A FLAT HONEY-KNIFE HANDLE.

It is important to have a flat honey-knife handle. Put the knife in the vise, and plane the handle half oval or flat. Whittle it with a jack-knife. It is the best thing I have discovered lately.

W. L. COGGSHALL.

West Groton, N. Y.

[I believe this suggestion is a most excellent one; but our friend did not specify whether that flatness was to be on a plane parallel with the blade of the knife or at a right angle to it. We as manufacturers can just as well have the handles flattened as round; but before making any change we should be glad to get expressions from beekeepers on this point.—ED.]

A DIFFERENCE IN THE GRADING-RULES.

Would it not be well if the bee-papers, in printing the rules for grading comb honey, would use the same wording throughout? By comparing the grading-rules in GLEANINGS and *Review* I find quite a difference. For instance, in regard to "Fancy," GLEANINGS says, "All the cells sealed except an occasional cell," while the *Review* says, "All the cells sealed except the row of cells next the wood." The *Review* claims to give the

Washington grading-rules. GLEANINGS is supposed to give the same, but does not say so. Why this difference? and which set of rules is the producer to follow in order to be certain that his grading will not be rejected by the buyer?

Please, Messrs. Editors, put your heads together and come to an agreement on this point, so that the producer may pick up any bee-paper which comes handiest, and look at the rules without puzzling his brain about whether they are right or wrong. Grading is often a difficult job, and should not be made more difficult by conflicting rules.

WM. MUTH-RASMUSSEN.

Independence, Cal., Aug. 31.

[Several years ago it was suggested that a slight change in the Washington grading would improve it. We made the change, and supposed it was also made by the other bee-papers. What the reasons were for making the change I can not now recall. Those who were responsible for it will please let us hear from them.—ED.]

HOW TO MOVE BEES A SHORT DISTANCE AND HAVE THEM STAY.

I have a colony to move about four blocks. How would you move them without losing some of them?

FLOYD SMITH.

Aurora, Neb.

[To move bees a short distance in the warm time of the year, shut them up in the hive, take them down cellar or to any cool place, and keep them for four or five days; but in doing so make very sure they do not smother. The entrance should be covered with wire cloth, and possibly the top of the hive, the amount of wire cloth to be used all depending upon the strength of the colony. At the end of the period of confinement, put the bees upon permanent location. A very few of them may go back; such as do may be collected on a frame of brood and carried to the new location, when they will probably stay for good.—ED.]

FRIEND SALISBURY SENDS A FURTHER REPORT IN REGARD TO HIS OLDSMOBILE.

My auto still goes, but it is a little more expensive than it was, for I have had to have one extra tire costing \$17.00 with inner tube. It runs much stiller than when you were here last winter. Our folks can not tell when I go out or when I come in.

I just received a letter from Mr. Doolittle inquiring about gasoline. I can get it delivered at my door for 12½ cents. He had about 30 gallons that we purchased for him, together with 5 gallons he got separately. He still has 15 gallons, so he does not ride very much. I have used in the same time about 50 gallons. The set of dry batteries that came with the machine lasted till July 1, this year, and carried me all told about 3000 miles. I think they did extremely well. I have placed in a new set costing me 11 cts. each, or 88 cts. for the 8 cells. I have figured up the cost of running, and so far

it has cost me 1½ cts. per mile, not counting the depreciation.

I have had no trouble to amount to any thing, with the exception of tire troubles. The tires are a nuisance. They puncture too easily. If they could only get up some kind of wooden tire that would stand the hard knocks I should be one of the first to use them. I don't like to repair tires that have been running in the mud, manure, etc. I can stand grease better than this, though I don't like that any too well.

Syracuse, N. Y.

F. A. SALISBURY.

POISONED (?) HONEY FROM COTTON, AGAIN.

I note an inquiry in GLEANINGS, page 811, August 15, regarding poisoned cotton killing bees or poisoning honey. I keep a few bees and raise cotton, and poison it almost every year, but I don't find any dead bees or poisoned honey. Cotton blooms in the morning. The bloom is white. In the evening the bloom closes, and drops off next day. Cotton poisoned after 4 P.M. can't possibly hurt bees. Any cotton-planter will tell you that.

SAM. AVARD.

Hawthorn, La., Aug. 20.

STINGS A CURE FOR RHEUMATISM.

I see in GLEANINGS, Aug. 1, W. W. Rich speaks of stings for rheumatism as a hoax. My wife suffered for several years with rheumatism in arms, hands, and shoulders. Last year she worked with me in my backyard, and of course got stung; also this summer, and now she is almost entirely cured. I feel sure it was the poison of the stings that cured her; and I can further say that I am not acquainted with any bee-man or woman who has rheumatism.

Southwold, Ont.

F. W. EDMONDS.

[We shall be glad to get reports from others regarding the bee-sting cure.—ED.]



Dear to our hearts is the busy bee
(Of course, for she brings us the honey);
Fleet to our sight is her airy flight
(But her sting isn't quite so funny).

Busy indeed from morn till eve,
Never a moment stopping;
I wonder if, like the daughters of eve,
She has an idea she is shopping.

Over the apple-tree bloom she flits,
And her hum of content—oh, hark it!
But the best of it all is, the sweet she gets
We'll soon be sending to market.

And now, busy workers, the eve has come;
Rest from your toil and labor,
While I in content, with the cash you've brought,
Can chat with my next-door neighbor.



The fear of the Lord prolongeth days; but the years of the wicked shall be shortened.—Prov. 10:27.

I suppose some people would smile if I should suggest that those who remember the sabbath day to keep it holy would live longer, as a rule, than those who either pay no attention to the sabbath or make it a day of visiting and seeking amusement. I have already spoken of the frequency of accidents and death on God's holy day; and for some time back I have been noting how the newspapers generally carefully avoid mentioning the fact that certain accidents and sudden deaths occur on Sunday. They give the day of the month without mentioning the day of the week. If the catastrophe occurs on week days they almost invariably give the day of the week. I suppose the explanation is something like this. The friends of the boy who was drowned go to the editor and say, "Please do not mention that it happened on Sunday. Just give the day of the month, and but few people will notice that it was Sunday. You see it looks a little bad to have it given right out in print that he was off with a crowd boating or bathing on Sunday; and it would be better, under the circumstances, to avoid calling attention to the fact."

I do not know that this is always true, but I think it must be, because where the excursion comes off without any mishap most of the papers simply say "last Sunday."

As the greater part of our great city dailies are now exhorting for better morals in almost every direction, I have wondered that they did not come out with more protests against Sunday desecration. The *Cleveland Leader* comes pretty near hitting the spot in the following editorial which I have just clipped:

It is true, as it is inexplicable, that the first day of the week, our Christian sabbath, is notable in newspaper circles for its record of violent deaths. Monday's paper, chronicling the events of the preceding day, bristles with tragedies by water, by fire, by explosion, by accidents on railroads, in fact, by scores of common or unusual roads to the grave. Yesterday's paper was particularly marked in the regard referred to.

You will notice the above clipping was taken from a Tuesday paper. The last sentence refers to the record of accidents of the day before. They record the sad fact as "inexplicable;" but if they would reflect a little I think they might find a great lot of facts by way of explanation; and it is my purpose just now to mention some of them.

If we go into any community and sort out or sift out the persons who have little or no respect for the sabbath, you will not only have an ignorant lot, but a vicious lot. A man in our town wanted to run his billiard saloon all night and Sunday. The ministers of our place remonstrated, and their remonstrances were effectual. In talking the matter over with one of our principal divines—

a man of education and culture—this fellow said something like this: "I do not go a — on your Sunday." Of course, he put in a bad oath where I have placed the blank. Now, he meant that, so far as he was concerned, he had no sort of regard for Sunday, even if the laws of our land besides the feelings of Christian people respected it. Probably his religion consisted in making all the money he could by hook or crook, and looking out for No. 1. I suppose there are not very many who would go to such length as he did, especially in using such language to a minister of the gospel. But there are scores of people in every community who would as soon go to an excursion, circus, or theater on Sunday as any other day — perhaps a little sooner, because they then, as a rule, have more time. Well, is it not true and reasonable to believe that a crowd made up of such people would have fights or brawls, and accidents and wrecks of some kind? Just last Sunday, Sept. 18, there was an Italian picnic in Cleveland. Right in front of the band, where the biggest crowd was congregated, somebody exploded a bomb, killing two people instantly, and wounding a lot of others. Two explanations of the matter have been given. One is that an opposition Italian band had a spite against this one. The other is that some stupid idiot placed it there and lighted the fuse as a joke.

Next Sunday the Baltimore and Ohio Railroad Co. makes a very low rate all along its line to Wheeling, W. Va. They not only give remarkably low rates for this Sunday excursion, but at the bottom of one of the bills that was put up in our factory they hold out the following inducements to have people join the crowd:

"Vaudeville show, band concert, bowling, roller coaster, merry-go-round, and numerous other amusements."

I mention this particularly, because it is the first time I remember to have seen a notice of a vaudeville show and band concert, merry-go-rounds, etc., operated on Sunday. Is this within the limit of the laws of our State and of the United States? or have our people got to such a standpoint that they trample the law under foot?

Some time ago in a conference with a number of railroad men they expressed a strong desire to be relieved of the Sunday-excursion business. They said they consented to it only under strong pressure, and that railroad employees were against it, and the railroad officials. I have heard this several times since. If this is true, who is it that is right down at the bottom of these Sunday excursions? Now, I would not undertake to make any long-range predictions in regard to the weather; but I think I can pretty safely predict (on short range) that there will be death or accident next Sunday at Wheeling.

A few days ago the younger people persuaded me to go down to Cleveland to see the automobile races. I objected on several grounds. I do not believe in contests of any kind; I do not believe in strife; and I am also opposed to running automobiles at a speed that endangers the life of the driver if a

tire should burst or a wheel break down.* Had it not been for the danger of the thing I could have enjoyed somewhat seeing the automobile come right up toward me and pass close by at a speed of more than a mile a minute. It is a fearful sight to behold, and there is something grand about it to see what human brain and muscle have accomplished. I admired the skill and courage of Earl Keiser and others. I remember thinking at the time that none of these great races, so far as I had heard, had ever been made on Sunday; but a few days afterward the papers were chronicling a bad accident at the St. Louis exposition. Barney Oldfield, becoming blinded by the dust of his rival, ran into a fence, and killed two men. None of the papers, and none of the automobile journals (we take six) mentioned that it happened on Sunday; but the way in which the date was given made me remark to Mrs. Root, "There, I'm afraid this race was made on Sunday."

"But it could not have happened on the exposition grounds, husband, because they have never been opened on Sunday."

A little further along I found that the races were on the track outside of the exposition grounds; but reference to the calendar showed I was right. It was a Sunday race. I felt glad to learn that Mr. Oldfield declared then and there that he would nevermore take part in any race. I should have been better pleased had he declared to the crowd that he would never again race *on Sunday*. You may think I am going a little to extremes; but while I dictate I learn that Barney has already reconsidered his decision, and has been induced to continue in the racing business. Of course, some of you will call me superstitious because I think there would have been less danger of death had this race been on a week day. Well, here is one fact I can give you. Of course, an investigation was made as to whether Mr. Oldfield was in any way to blame for the deaths. He was exonerated, I believe, on several grounds. One was that one of the men who was killed had been told repeatedly by the police to get back of the rope, but he disobeyed orders, and this disobedience caused his death. Well, now, is it not true that the man who has no scruple about going to such a place on Sunday would be more liable to disobey the police? He has broken God's law, and it is but a little step to go further and break the laws of the land or of the presiding officer. Breaking God's law paves the way for disregarding man's law, and disobedience brings death. To make it shorter, "the wages of sin is death." Our text puts it in another way that makes it a little broader and more comprehensive.

Our great dailies, as I have suggested, are

giving us some big lifts in the way of temperance editorials. May God be praised for these vehement exhortations. But why are these papers so silent about Sunday desecration? I wonder if Christian people generally are not getting a little loose in regard to this matter. Do they really believe that their example may be the means of bringing about accident and death, or, worse still, the ruin of both body and soul? In a recent terrible accident on Sunday, the fact was brought forth that the engineer in charge of the train had been on duty for 26 hours. Very likely they paid extra for overtime. They were making a lot of money, and could afford to pay a man handsomely for over-tasking brain, muscle, and nerves, and with the result I have given. I wonder if that beautiful text would not come in well here: "With what measure ye mete withal it shall be measured to you again." I have before mentioned the fact that the American people all over the world have seemed to think that automobiles are immune to our Sunday laws; and it is suggested quite frequently, and I do not know but sometimes from the pulpit, that the old order of things is passing away, and that different conditions of things now call for different ways of Sabbath observance. Our pastor asked the question at our Saturday-afternoon prayer-meeting a few weeks ago whether it is the proper thing for a minister of the gospel to use the electric cars to meet his appointments on Sunday. I believe the general decision was that a man who preaches had better get to his appointments in some other way; for his presence on the car would certainly encourage others whose consciences might otherwise trouble them. They could say to themselves, if not out loud, "Why, our pastor rides on Sunday on the cars, and why shouldn't we?" Well, I believe I can say our pastor does not ride on the Sunday cars. He refused to take an appointment where Sunday travel would be almost a necessity. I think, however, he told us we should be a little careful about being too severe in deciding what other people should do. He mentioned quite a prominent divine who, he said, had to his knowledge preached during the day in Oberlin and in the evening in Cleveland. The distance is about 40 miles. He said he did not know how he managed to get to his Cleveland appointment. It would be too far to drive a horse, and the Sunday cars, either steam or electric, would seem to be the only way to make it. Now, I may be making a mistake; but my opinion is that the pastor had better preach less, or nearer home, than to encourage this kind of Sunday travel. Such a trip might induce the railroad men to say, "Why, even your ministers are dependant on our Sunday cars to meet their appointments.* Besides going to

* Right before our eyes, one of the cars in that race, while going almost if not quite a mile a minute, burst a wheel, making a turn, and the whole thing went into the fence, wrecked. Nobody happened to be near the fence on that part of the grounds, and the rider escaped almost miraculously, comparatively unhurt.

*While I dictate, it occurs to me that a near relative of mine attends church every Sunday by means of the electric cars. In fact, she could not well get there otherwise — at least a great part of the time. It may be a question as to how many use the cars to go to church compared with those who go to some place directly antagonistic to our churches and Sunday-schools.

church on Sunday I have used our auto to go four miles out in the country to a schoolhouse Sunday-school; but when I did it I confess I felt a little troubled for fear people might think my daughter and I were just going out Sunday afternoon for a ride in the country through the fields and woods. I think it is well to ask ourselves the question, when we are considering about what we shall do on Sunday, "Will this thing I have in mind oblige any of my fellow-men to work on Sunday when they might not have to do so otherwise?" If *you* need the benefit of the Sunday rest, so does your neighbor, whether he lives next door or a thousand miles away.

In speaking of the accident at St. Louis I said two men were killed. One was on account of disobeying the police. The other was passed by with the simple explanation that he was a "colored man;" and I felt sad to think that the general impression seemed to be that it was not so much matter if a colored man is killed. Now, I would urge that even a colored man, as well as the poorest common laborer of the white race, should have his Sunday as a day of rest. "Thou shalt love thy neighbor as thyself;" and God's holy word does not specify that our neighbor must be white to be considered as a neighbor in the full sense of the word.

Well, dear friends, I have covered only a very small part of our text. I have applied it mostly to Sunday observance; but I think we shall find that the fear of the Lord in a thousand ways not only prolongs our days but gives us health and happiness while we live. We should not only fear constantly breaking his holy commands, but we should love to reverence and recognize him as God the Father every day and every hour.

CAN A CHRISTIAN CONSISTENTLY TRAVEL WITH AN AUTOMOBILE?

Dear Sir:—I read, in the last issue of GLEANINGS, your discussion of the question whether a man can be a Christian and drive an automobile. I agree with you that it is rather a problem in horse-training than a question of ethics. This is an age of progress, and there is no reason why Christians should not be in the forefront. If they live up to their privileges they ought to lead the forward movements of society. From the point of view which you adopt, your conclusions are perfectly valid.

From another standpoint it may be questionable whether a Christian can drive an automobile at the present time. Automobiles are still in the experimental stages of development. They sell for prices that keep them in the class of expensive novelties. Where they do answer an economic purpose they are expensive substitutes for equally efficient though less attractive means of conveyance. When autos can be as cheaply purchased and maintained as carriages, a Christian may own and operate one as a necessity, but not until then. Let us see the reason.

Christ came to bring the more abundant life to all mankind. At his departure he commanded his followers, the first Christians, to preach the gospel to every creature. Each generation since has inherited the duty and the privilege implied in that commandment. The Christians of to-day are responsible for preaching the gospel, during their lifetime, to every person now living. The Christians of a generation ago or of the generations following could not do it; besides, they are responsible for their own particular time. Christ said: "It is not the will of my Father that any should be lost, but that all may have eternal life. I came not to do mine own will, but the will of him that sent me. As the Father has sent me, so send I you. Go preach my gospel to every creature. He that loveth father or mother or

houses or land more than me is not worthy of me. Unless a man will leave all and follow me he can not be my disciple."

Unless the men now living hear the gospel from the Christians now living, Christ's last commandment can never be fulfilled for them. This lays a great opportunity and a great responsibility at the doors of the Christian church to-day. Never has the world been open to the gospel as it is to-day. Never has the cry of need rung to heaven as it does to-day. Never has the consecrated wealth of Christians had the power for good that it has to-day. Never have there been so many consecrated men waiting to be sent as there are to-day. The price of an Oldsmobile (\$650) will support an American missionary on any field for nearly eighteen months, or fourteen native workers in India or China for the same period. In view of the command of the Master, the need of the world, and the far-reaching results of the money expended, I doubt whether any man who has the same burning desire for the regeneration of men which marked the life of Jesus and his earlier followers would be willing to spend for an automobile money which could be bearing so much more glorious fruit for the kingdom of God.

May God forgive us for adopting his name when we so little appreciate his desires or share his spirit!

Rittman, O., Sept. 20.

RAYMAN F. FRITZ.

Dear Bro. F., not only do I thank you for your kind exhortation, but I am sure every professing Christian will thank you from the bottom of his heart for the vivid and thorough way in which you have pictured before us the necessity of a higher spiritual plane of life than most of us probably know much about. Before taking up the latter part of your letter I wish to suggest that, if the time has not already come, it is fast coming when it will be, under many circumstances, cheaper to travel with an automobile than horses. And, again, is it not true that your suggestions in regard to the expense will apply equally well to fine equipages drawn by a high-priced span of horses?

I had the same feeling you mention when I consented to pay \$650 for an auto. After over a year's experience, however, I am satisfied that in no other way could this sum of money have given us the comforts and conveniences this investment has. It enables me to take trips that I should hardly think of taking with a horse and buggy. It has enabled me to speak from experience in regard to this whole matter.

Once more, if we were to push this whole line of reasoning, can a professing Christian consistently build himself a house worth several thousand dollars? May it not be his Christian duty to live in the old house a little longer, using the money for missions instead of putting it in a new house? We have just finished an up-to-date bathroom in our house. I not only superintended the whole of it, but got down in the ditches to see that the pipes were all laid properly. Our new bath-tub is of enameled iron, and is as easy to keep sweet and clean as the dishes on our dining-table. The wash-basin and closet are also of the latest pattern from a sanitary point of view. You may remember that both Mrs. Root and myself at different times have passed through a siege of malarial fever, and I came near losing my life. I hardly need tell you that the hope of combatting such diseases is along the line of improved sanitation. It is possible, also, that an automobile, with the opportunity and inducement it gives for open-air exercise, may prolong life.

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64-PAGE CATALOG.

J. M. Jenkins,
Wetumpka, Alabama.

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